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Systematic study of the genus *Phiaris* Hübner (Lepidoptera: Tortricidae) from Korea and Japan, part I

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Abstract The genus *Phiaris* Hübner, 1825 from Korea and Japan is reviewed. In this study eight species of two species-groups, the *pryerana*- and *bipunctana*-groups are treated. Among them, two species, *acropryerana* sp. nov. and *opacalis* sp. nov. are described as new to science, and two species, *mori* (Matsumura) and *morivora* (Matsumura), and one subspecies, *bipunctana yama* (Kawabe), are newly transferred to this genus. Adults and genitalia of both sexes are illustrated. Host plants are listed. Keys to species groups and to species of each group are provided.

Key words Lepidoptera, Tortricidae, Olethreutinae, *Phiaris*, new species, Korea, Japan, taxonomy.

Introduction

Phiaris Hübner, 1825 is a genus of the Tortricidae and belongs to the tribe Olethreutini. More than 50 species of the genus are distributed mainly in the Holarctic region. Diakonoff (1973) classified the genus as a subgenus of *Olethreutes* (*sensu lato*) and listed 23 species with one new species. He recognized the subgenus by the following characters: sacculus more or less flattened in basal half, without an oblique transverse elevation or ridge and a ventral process; cucullus more or less dilated at basal half (the dilation often with a lateral process), usually crowned with a cluster of spine-like setae. However, Kuznetsov (1978), in the study of European part of the USSR, treated it as a distinct genus divided into two subgenera, *Phiaris* and *Biscopa* Diakonoff, 1973, and provided the key to the species. When Razowski (1983, 1989) revised this genus, he mentioned that the structure of the sterigma is similar to that of *Celypha* Hübner, 1825 and the signum is of the same type as the *Celypha-Argyroploce* complex, but he distinguished *Phiaris* from *Celypha* by not having a group of long bristles on the sacculus. Bradley *et al*. (1979), Kawabe (1982), and Park (1983) placed *Phiaris* in the genus *Olethreutes* Hübner, 1822 based on the similarities of their external features, and without detailed study on the relationships within the species group. Recently, Razowski (1995) listed 29 species of *Phiaris* from the Palaearctic region, and Razowski (1996) confirmed 17 species in his checklist of the European Lepidoptera. The external characters, such as the wing patterns or the coloration, are insufficient to separate this genus from some related genera, *Celypha*, *Olethreutes*, *Pristerognatha* Obraztsov, 1960, and others, but the characters of genitalia are readily available for identifying the species or genus as proposed by Razowski (1983, 1989), and I have adopted his system in this paper.

In this study, I recognize a total of 28 species including five new species, and place them into seven species groups. My revision is divided into three parts. The present study is the first part containing the descriptions of the genus, species groups with key, and treating eight species of two species-groups, the *pryerana*- and *bipunctana*-groups. The second part will treat the *olivana*-group, and the third part will treat four species groups, the *hydrangeana*-,

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semicremana-, *exilis*- and *electana*-groups.

The material examined is mostly based on the following collections (abbreviations in bracket): the Natural History Museum [BNHM], London, U. K.; Center for Insect Systematics [CIS], Chuncheon, Korea; the Hungarian Natural History Museum [HNHM], Budapest, Hungary; Department of Biology, University of Inchon [UIB], Inchon, Korea. Most of the Japanese materials with holotypes will be deposited in the collection of the Entomological Laboratory, Osaka Prefecture University [OPU], Sakai, Japan. Abbreviations for the provincial names are as follows: CB—Chungbug; CN—Chungnam; GB—Gyeongbug; GG—Gyeonggi; GN—Gyeongnam; GW—Gangwon; JB—Jeonbug; JJ—Jeju; JN—Jeonnam.

Systematic accounts

Genus *Phiaris* Hübner

Phiaris Hübner, 1825, *Verz. bekannt. Schmett.*: 381. Type species: *Tortrix micana* [Denis and Schiffermüler], 1775, *sensu* Hübner, 1799=*Sericoris olivana* Treitschke, 1830, by subsequent designation by Fernald (1908: 11, 56).

Mixodia Guenée, 1845, *Annls Soc. ent. Fr.* (2) **3**: 26. Type species: *Pyralis schulziana* Fabricius, 1777, by subsequent designation by Desmarest (1857: 223).

Biscopa Diakonoff, 1973, *Zool. Monogrn Rijksmus. nat. Hist.* **1**: 492. Type species: *Pyralis bipunctana* Fabricius, 1974, by original designation.

Small to large sized moths; wing-expanse 9.5–23 mm (Figs 1–10). Labial palpus ascending, median segment apically expanded, sometimes not expanded, *e. g. tsutavora* Oku and an undescribed species from Korea, terminal segment shortly exposed and drooping, or pointed and descending. Fore wing broad or narrow, elongate-subtriangular. Description of venation based on *bipunctana yama* (Kawabe) (Fig. 11): all veins separate; chorda from apical 3/4 between R_1 and R_2, to between R_4 and R_5; M-stem to between M_2 and M_3; R_1 from before middle of discal cell; R_2 from apical 2/3 between R_1 and R_3; R_3 from 2/3 between R_2 and R_4; R_4 from angle; R_5 separate, to termen; M_2 closer to M_3; M_3 closer to CuA_1, not approximated at margin; CuA_1 from angle; CuA_2 from 2/3 of discal cell. Hind wing elongate-ovate; Rs and M_1 closely approximated towards base; M_3 and CuA_1 approximated at base; CuA_1 from angle; CuA_2 from 2/3 of discal cell. Male secondary sexual characters: Hind tibia with a hair pencil on inside of its proximal end, which is 0.5–1.0 times as long as tibia. Dorsum of hind wing with a large, dorsal fold or pocket-like fold.

Male genitalia (Figs 12–24). Tegumen long; uncus a variably long process, broad at base, rarely almost atrophied, *e. g.* an undescribed species from Korea; socius triangular, setose; gnathos more or less sclerotized in transverse band. Valva variably long; cucullus clavate, well separated from sacculus by a longitudinal slit or furrow, narrow and long, with many stout setae on ventral part, the basal protuberance well developed; sacculus long and narrow, often with an apical process and one or two clusters of spine-like setae, rarely with a distinctly pointed prominence at ventro-caudal margin, *e. g. semicremana* (Christoph). Aedeagus short; cornutus usually absent, often several stout spine-like cornuti present.

Female genitalia (Figs 25–31). Sterigma variously large, sclerotized, aciculate, often strongly convex or expanding around ostium bursae, with lateral or posterior plates. All those structures situated in a slender anterior fold. Colliculum variously short; ductus seminalis originating from dorsal post median or subterminal end of it. Corpus bursae globular;

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signum usually absent, and if present, a small concave plate with numerous dents.

Biology. Larvae feed in spun leaves of *Vaccinium* Linn., *Rubus* Linn., *Prunus* Linn., *Morus* Linn. and *Rhododendron* Linn.

Distribution. Holarctic and Oriental regions.

Remarks. The structures of clusters of spine-like setae on the valva in the male genitalia and sterigma and signum in the female genitalia are similar to those of *Celypha*. *Phiaris* can be separated from other related genera of the tribe Olethreutini by the combination of the following characters: forewing chorda from apical 3/4 between R_1 and R_2, to between R_4 and R_5, vein R_3 from 2/3 between R_2 and R_4, valva with a longitudinal slit or furrow between cucullus and sacculus; sacculus with cluster of long (longer than that of aedeagus) and thin spine-like setae on apical lower margin. The separation of the genus into seven species-groups is based on the male and female genitalic characters.

The *pryerana*-group: This species-group is separated from the other members by the following characters: (i) the valva is scattered with very long 20–50 spine-like setae on outer surface, and (ii) the uncus is always a narrow and long process.

The *bipunctana*-group: The group is characterized by the shape of the sacculus, which is extended distally and usually with a strong and dense setose cluster on its apex.

The *olivana*-group: The group is separated from other members by the following characters: (i) the uncus is remarkably hooked and usually bilobed, (ii) the tegumen is high, and (iii) the valva is slender, with a distinct longitudinal slit on the inner surface.

The *hydrangeana*-group: The group is characteristic in having a very broad valva (about three times as broad as the diameter of the aedeagus).

The *semicremana*-group: The group is characterized by the presence of a distinctly pointed prominence at the ventro-caudal margin of the sacculus.

The *exilis*-group: The group is separated from other members by the following characters: (i) the uncus is very short or atrophied, (ii) the valva is strongly folded at the middle part, and (iii) the cucullus has a narrow neck in the middle part.

The *electana*-group: The group is characterized by the following characters: (i) the forewing is blackish brown with a yellowish orange band at basal 1/3, (ii) the sacculus has a lobe at the ventral margin and forms a deep excavation beyond 1/2 of it, and (iii) the uncus is pointed apically.

As mentioned above, this genus has been divided into two subgenera, *Phiaris* and *Biscopa*, by Kuznetsov (1978). In the present seven species groups, the *olivana*-group, a typical section of *Phiaris*, belongs to *Phiaris*, the *bipunctana*-group is directly attributed to *Biscopa*, and the other five species groups are roughly placed in *Phiaris*. But the subgenus *Phiaris* produced by the climination of *Biscopa* seems to become a somewhat heterogenous or paraphyletic entity, and more information including the early stages is needed to analyze the relationship of the *olivana*-group and the five species groups other than the *bipunctana*-group. In this paper, therefore, I defer the introduction of the subgeneric division even for *Biscopa*.

Key to the species groups of the genus *Phiaris*

1. Forewing ground color blackish brown with a yellowish orange band at basal 1/3; saccullus with a lobe at ventral margin and forming a deep excavation beyond 1/2 ..... *electana*-group
- Forewing without such color; sacculus without such lobe 2

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2. Uncus long, conical; sacculus not strongly concave above ventro-caudal margin ……3
- Uncus very short or atrophied; sacculus strongly concave above ventro-caudal margin ……*exilis*-group
3. Valva broad, about three times as broad as diameter of aedeagus ……*hydrangeana*-group
- Valva narrow, about two times as narrow as diameter of aedeagus ……4
4. Sacculus with a pointed prominence at the ventro-caudal margin ……*semicremana*-group
- Sacculus without a pointed prominence at the ventro-caudal margin……5
5. Valva with distinct longitudinal slit on inner surface; sacculus without cluster of long spine-like setae ……*olivana*-group
- Valva with indistinct longitudinal slit on inner surface; sacculus with a cluster of long spine-like setae……6
6. Valva scattered with very long 20–50 spine-like setae on outer surface; uncus narrow and long; sacculus widely extended distally……*pryerana*-group
- Valva densely covered with a cluster of long and strong setae on apex of sacculus; uncus conical and rather short; sacculus not extended distally ……*bipunctana*-group

The *pryerana*-group

This group contains three species in Korea and Japan, *pryerana* (Walsingham), *acropryerana* sp. nov. and *siderana* (Treitschke).

Key to the species of the *pryerana*-group

1. Forewing fuscous brown, with obscure basal and central markings ……*siderana* (Treitschke)
- Forewing ferruginous brown or brown, with distinct basal and central markings ……2
2. Forewing with silvery metallic and dark brown strigulae ……*acropryerana* sp. nov.
- Forewing without such strigulae ……*pryerana* (Walsingham)

Phiaris pryerana (Walsingham), **comb. rev.** (Figs 1–3, 18, 26)

Exartema pryeranum Walsingham, 1900: 126; Inoue, 1954: 108. Type locality: Japan (Honshu).
Phiaris pryerana: Issiki, 1957: 70, fig. 339.
Olethreutes pryerana: Oku, 1969: 465, fig. 1; Kuznetsov, 1973: 127; Kawabe, 1982: **1**: 108, **2**: 170, pl. 24, figs 21–23, pl. 285, fig. 3, pl. 292, fig. 3; Park & Kawabe, 1986: 194, figs 3, 8, 8–1; Park & Park, 1988: 71, figs 4, 14; Razowski, 1995: 311; Byun *et al.*, 1998: 130, fig. 223 on p. 219 (adult), fig. 223 on p. 254 (♂ genitalia); Razowski, 1999: 104.

Wing-expanse. ♂ 14–18 mm, ♀ 13–21 mm. Wing markings as in Figs 1–3.

Male genitalia (Figs 12, 18). Uncus long, as long as aedeagus, slender, sparsely setose; socius long, narrow; gnathos laterally sclerotized. Valva long, with 18–20 long and acicular setae (1.5 times as long as tuft of spine-like setae at apical part of sacculus); cucullus rather broad, slightly projecting at the middle of ventral sides, with strong spine-like setae except on the apical part, the setae very dense on the basal part; sacculus with a prominence at ventro-caudal margin, with tuft consisting of 10–12 spine-like setae at apical part, and with more than 25–30 short spine-like setae near basal cavity. Aedeagus very short, without a cornutus.

Female genitalia (Fig. 25). Seventh sternite rather convex laterally, and the caudal part

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strongly concave, forming a membranous inner pocket. Sterigma crescent-shaped, densely aciculate, situated in the pocket. Ductus bursae long, about three times as long as corpus bursae; colliculum short; corpus bursae moderate size, without a signum.

Material examined. KOREA: [GW] 1 ♂, Unduryeong, Pyeongchang, 7. VIII. 1997; 1 ♀, Mt Daedeok, Taebaek, 11. VII. 1997, coll. UIB. [GG] 1 ♂, Gwangleung, 3. VI. 1988. [GW] 1 ♂, Mt Dosol, 6. VIII. 1987; 1 ♂ 2 ♀, Mt Daeam, 6. VIII. 1987, 1 ♂, 27. VII. 1988, 1 ♂ 2 ♀, 27. VII. 1988; 2 exs, Mt Taebaek, 24. VII. 1987; 1 ♂, Mt Yaksu, 8. VIII. 1989; 1 ♀, Seomyeon, Yangyang, 30. V. 1987. [GN] 1 ♀, Mt Jiri, 22. VII. 1985, coll. CIS. JAPAN: [Hokkaido] 1 ♀, Utoro, Shiretoko, 16–17. VII. 1971; 1 ♀, Mt Meakandake, Ashoro, 1. VII. 1982; 1 ♂, Mt Daisetsuzan, 20. VII. 1952; 4 ♂ 1 ♀, Sounkyo, Mt Daisetsuzan, 7–9. VII. 1971; 5 ♂ 2 ♀, same locality, 20–25. VII. 1974; 4 ♂, Horoka, Higashidaisetsu, 26. VII. 1990; 7 ♂ 2 ♀, Nukabira, Higashidaisetsu, 20. VII. 1990; 13 ♂ 3 ♀, same locality, 23–25. VII. 1990; 1 ♂, Zyozankei, Ishikari, 26. VII. 1958; 6 ♂, Bibai, Koshunai, 23–25. VII. 1990; 5 ♂ 3 ♀, Nopporo, Ebetsu, 17. VII. 1990; 10 ♂, Hokkaido U. Exp., Tomakomai, 18–20. VII. 1990. [Aomori Pref.] 2 ♂, Towada, 6. VII. [Iwate Pref] 1 ♂ 2 ♀, Mt Sotoyama, 4–5. VIII. 1977; 1 ♂ 1 ♀, Kuzakai, Kawaimura, 6–10. VIII.; 1 ♂ 1 ♀, 29. VII. 1990; 1 ♂, Yagita, Morioka, 29. VII. 1990. [Tochigi Pref.] 1 ♂, Hatyonoyu Spa, 13. VII. 1959; 1 ♂, Kinunonuma, 12. VII. 1959. [Gunma Pref.] 1 ♂, Marunuma, 5. V. 1953; 4 ♂ 3 ♀, Kazawa Spa, 7–8. VIII. 1970. [Niigata Pref.] 1 ♀, Futai, Yuzawakyou, 19. VII. 1959. [Toyama Pref.] 1 ♂, Oyabe, 15–16. VIII. 1991. [Yamanashi Pref.] 1 ♀, Kiyosato, 20–22. VIII. 1987. [Nagano Pref.] 2 ♀, Shigakogen, 11. IX. 1953; 1 ♂, Mt Shiroumadake, *ca* 2,933 m. 25. VII. 1955; 2 ♂, 14. VII. 1953; 1 ♂ 1 ♀, Sugadaira, Sanada, 30–31. VII. 1989; 1 ♀, Hosono, 15. VII. 1955; 1 ♀, Tokusawa Spa, 21. VII. 1955; 1 ♂ 1 ♀, Mt Tokugotoge, *ca* 1,600–2,135 m, 29. VII. 1955; 1 ♀, Mt Utsukushigahara, 19. VIII. 1953; 1 ♂ 1 ♀, Minodoguchi, Mt Yatsugadake, 2–4. VIII. 1989; 2 ♂, Kareikogen, *ca* 1,820 m, Kamiina, 24. VII. 1990. [Gifu Pref.] 1 ♂, Hikagedaira, 14. VII. 1978; 1 ♀, 17. VII. 1987; 1 ♀, 23. VII. 1988. [Shiga Pref.] 1 ♂, Mt Hirasan, 22. VI. 1927. [Kyoto Pref.] 1 ♂, Mt Hiezan, 16. VI. 1950; 1 ♂, Hanase, 2. VI. 1951. [Nara Pref.] 1 ♂, Mt Kasugayama, 1. VII. 1957; 1 ♀, Dorogawa, 30. VII. 1951; 2 ♂, Mt Wasamatayama, 23. VII. 1991. RUSSIA: 2 ♂ 2 ♀, Ussury Reservation, 40 km E of Ussuryisk, 140–150 m, 12–21. VII. 1990; 1 ♂, Primorski, 25 km SE of Chernigovka, *ca* 180 m, 23–24, VII. 1990; 1 ♀, Andreevka (near seaside), Primorski, 30. VII–1. VIII. 1990, coll. S. Moriuti.

Distribution. Korea, Japan (Hokkaido, Honshu, Shikoku), Russia (Primorye, Kuril Is).

Host plants. Russia: *Fragaria iinumae* Makino (Rosaceae); *Polygonum sachalinense* Fr. Schm. (Polygonaceae); *Thermopsis lupinoides* (Linn.) Link (Leguminosae); *Actinidia polygama* (Sieb. et Zucc.) Maxim., *A. kolomikta* (Rupr. et Maxim.) Maxim. (Actinidiaceae) (Kuznetsov, 1973).

This species is similar to *Celypha rivulana* (Scopoli) in appearance, but can be separated by the pale ochreous ground color instead of silver in the latter. The forewing coloration and markings are extremely variable, especially in the shape of the pretornal patch. The female genitalia of this species are also very closely allied and similar to *acropryerana* sp. nov. The diagnostic characters are noted in the remarks for *acropryerana* sp. nov.

***Phiaris acropryerana* sp. nov.** (Figs 4, 26)

Wing-expanse. ♀ 16.5–17.5 mm (Fig. 4). Head pale grayish ochreous, mixed with dark

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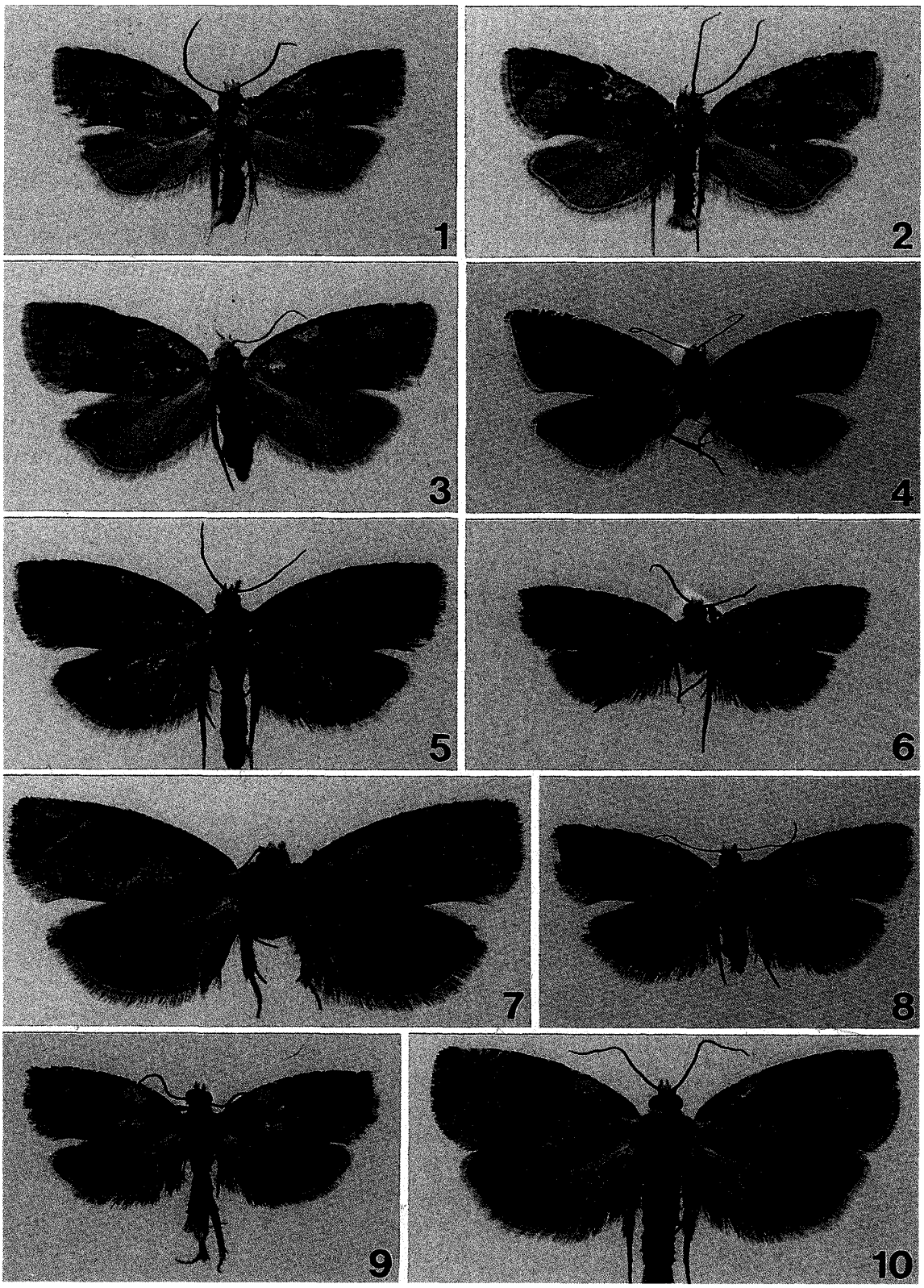

Figs 1-10. Adults of *Phiaris* spp. 1-2. *P. pryerana* (Walsingham), ♂. 3. *Ditto*, ♀. 4. *P. acropryerana* sp. nov., ♀, holotype. 5. *P. siderana* (Treitschke), ♂. 6. *P. opacalis* sp. nov., ♂, holotype. 7. *P. ineptana* (Kennel), ♂. 8. *P. bipunctana yama* (Kawabe), ♀. 9. *P. morivora* (Matsumura), ♂. 10. *P. mori* (Matsumura), ♂.

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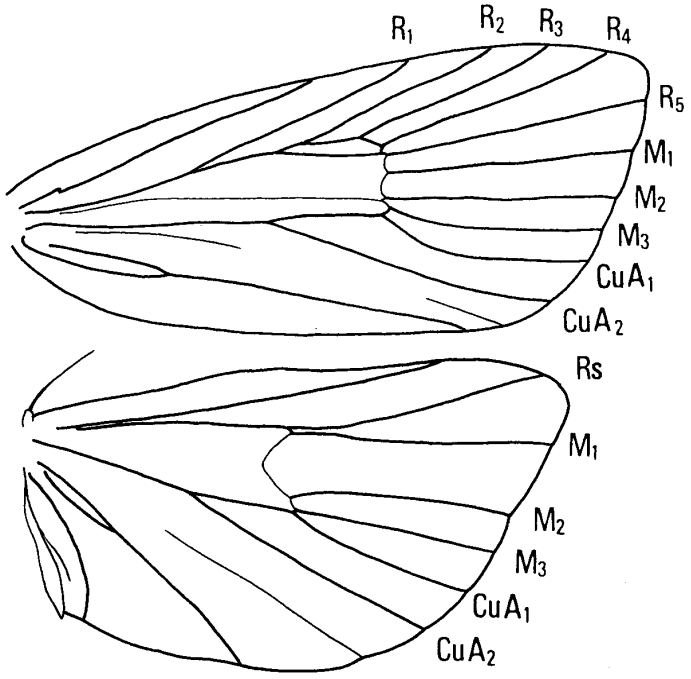

Fig. 11. Wing venation of *Phiaris bipunctana yama* (Kawabe).

grayish brown scales. Antenna dark gray, narrowly scattered with white ochreous dorsally. Labial palpus pale ochreous; median segment apically expanded, irrorated with blackish brown; terminal segment pointed and porrect, scattered with blackish brown scales. Thorax ochreous, striated with blackish brown hairs on dorsal side, brilliant gray scales on ventral side. Fore- and midlegs ochreous, overlaid with brilliant gray; tarsi irregularly marked with five brownish rings; midtibia with two brownish spots at base and subapex. Hindleg whitish ochreous; femur overlaid with brilliant pale gray; tibia with two brownish spots.

Forewing broad; costa curved outwards; apex rather pointed; termen more or less straight. Ground color creamy white, striated and overlaid with plumbeous. Costal strigulae consisting of eight pairs of geminate yellowish white striae along the costa. Markings olive brown, striated with blackish brown; basal patch diffuse, well-striated; central fascia somewhat diffuse, broad, separated from pretornal patch, partially interrupted on inner edge; pretornal patch large, subtriangular; terminal patch broad, the top narrowly extending to costa; apical spot more or less large. Cilia creamy white; apical portion mixed with dark brown. Hindwing elongate-ovate, blackish brown; apex rather acute. Cilia pale gray, with a grayish brown subbasal line.

Male genitalia. Unknown.

Female genitalia (Fig. 26). Seventh sternite slightly convex at sides of posterior edge. Sterigma large hat-like, aciculate. Ostium bursae emarginated ventrally; colliculum moderate in size, tubular. Ductus bursae rather long, about twice as long as corpus bursae; corpus bursae narrow, without a signum.

Material examined. Holotype, ♀, Koutagi, Kitashitara, Aichi Pref., Honshu, Japan, 1. VII. 1975 (Y. Arita), Gen. sl. no. Kawabe 4686, OPU. Paratype. 1 ♀, Mt Baekun, Kwangyang, Jeonnam Province, Korea, 3. V. 1998 (Paek, Lee & Ahn), Gen. sl. no. UIB-193, UIB.

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Distribution. Korea and Japan (Honshu).

This new species is easily distinguished from the known species of the genus by the well-striated and distinct markings of the forewing. The female genitalia of this species are very closely allied and similar to *Phiaris pryerana* (Walsingham), but easily distinguished by the absence of the membranous inner pocket on seventh sternite.

Phiaris siderana (Treitschke), **comb. rev.** (Figs 5, 13, 19, 27)

Sericoris siderana Treitschke, 1835: 81. Type locality: Europe (Banat).
Argyroploce siderana: Caradja, 1916: 56; Benander, 1950: 87, fig. 8-g, pl. 5, fig. 10; Van Deurs, 1956: 219, pl. 25, fig. 8.
Olethreutes siderana: Rebel, 1901: 106; Issiki, 1957: 74, fig. 366; Okano, 1959: 263, pl. 176, fig. 5; Swatschek, 1958: 207; Hannemann, 1961: 207, pl. 18, fig. 6; Kuznetsov, 1967: 56; Kuznetsov, 1973: 132; Kuznetsov, 1978: 438, 445, fig. 388-1; Liu & Bai, 1977: 78, pl. 5, fig. 20, pl. 16, fig. 135, pl. 25, fig. 135; Kawabe, 1982: **1**: 106, **2**: 170, pl. 24, fig. 8; Park & Kawabe, 1986: 193, 194, figs 2, 9, 9-1; Park & Park, 1988: 74, figs 13, 26; Powell, 1983: 32; Byun *et al.*, 1998: 131, fig. 225 on p. 219 (adult), fig. 225 on p. 254 (♂ genitalia).
Phiaris siderana: Kuznetsov, 1978: 438, 445, fig. 388-1.
Loxoterma siderana: Razowski, 1983: 69, pl. 5, fig. 7; Razowski, 1995: 314; Razowski, 1999: 105.
Celypha siderana: Razowski, 1996: 144.
Argyroploce notata Walsingham, 1900: 129; Issiki, 1957: 74, fig. 366. Type locality: Japan (Hokkaido).

Wing-expanse ♂ 17–20 mm, ♀ 16–21.5 mm. Wing markings as in Fig. 5. Male secondary sexual characters: Hair pencil of hindleg 0.5 times as long as tibia, pale ochreous. Dorsum of hindwing with a small spindle-shaped roll, reaching tornal third from base.

Male genitalia (Figs 13, 19). Uncus long, with slender apex, sparsely haired; socius large, drooping; gnathos a well-sclerotized rounded plate, the stalk forming a rigid and slender tuba analis. Valva folded at middle; cucullus broad, apex clavate, with strong spine-like setae along the basal margin; sacculus long and narrow, without process, with tuft of long spine-like setae at apical section. Aedeagus moderately sized, well-sclerotized, with truncate top.

Female genitalia (Fig. 27). Seventh sternite normal tortricid shape. Sterigma large, an oblong naked plate, not aciculate, projected around ostium, the anterior margin folded outwards. Ostium bursae rounded, well-sclerotized; colliculum short, tubular, broader posteriorly, well-sclerotized. Ductus bursae very short, shorter than corpus bursae; corpus bursae large; signum a concave plate, consisting of numerous dents.

Material examined. KOREA: [GG] 2 ♂, Gwangleung, 2. VI. 1982; 1 ♂, Mt Myeongji, 23. V. 1991. [GW] 2 ♂; Chuncheon, 5. VI. 1985, 5 ♂ 3 ♀, 10. VI. 1985, 1 ♂, 16. V. 1989; 1 ♂, Seomyeon, Yangyang, 4. VI. 1987; 1 ♂, Mt Samak, 13. VI. 1990, coll. CIS. JAPAN: [Hokkaido] 1 ♀, Oshidomari, Rishiri I., 20–22. VII. 1971 (K. Tanaka); 1 ♀, Utoro, Shiretoko, 16–17. VII. 1971; 1 ♀, Kamisyunbetsu, Nemuro, 15. VII. 1980; 2 ♂ 3 ♀, Ashoro, 3. VII. 1958; 1 ♂, Mt Yubari, 30. VII-2. VIII. 1971; 6 ♂ 6 ♀, Sounkyo, Mt Daisetsuzan, 20. VII. 1974; 4 ♂, Mt Hakkenzan, Sapporo, 3. VII. 1981; 1 ♀, Misumori, Sapporo, 17. VII. 1974; 1 ♀, Aizankei, Mt Daisetsuzan, 10–12. VII. 1971 (K. Tanaka); 1 ♂, Jozankei, Ishikari, 7. VII. 1953; 1 ♀, Shikotsu L., Morappu, 17. VII. 1977. [Iwate Pref.] 1 ♀, Tsunagi, 14. VI. 1967; 1 ♂, Iwaizumi, 22. VI. 1978; 1 ♀, Kuzakai, Kawaimura, 14. VII. 1981. [Akita Pref.] 1 ♀, Tamagawa, 16. VI. 1951; 2 ♀, Yuze, 22. VI. 1951. [Niigata Pref.] 1 ♀, Akadani, 18. VI. 1968; 1 ♂, 14. VI. 1969. [Nagano Pref.] 3 ♂ 1 ♀, Shigakogen, 11. VII. 1958; 1 ♀, Mt Utsuku-

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shigahara, 19. VIII. 1953; 1 ♀, Tokugotoge, 28. VII. 1955; 1 ♂ 1 ♀, Tokusawa, Minamiazumi, em. 29. VI. 1985, *ex Astilbe odontophylla* Miq. (Saxifragaceae); 1 ♂, Ueno, *ca* 900 m, Azusa, Minamiazumi, em. 6. VI. 1989, *ex Spiraea chamaedryfolia* Linn. var. *pilosa* (Nakai) Hara (Rosaceae); 1 ♀, Miyatakogen, *ca* 1,600 m, Kamiina, 24. VII. 1990. [Gunma Pref.] 2 ♀, Mt Manzayama, Koozuke, 27. VII. 1958.

Distribution. Korea, Japan (Hokkaido, Honshu), China, Russia (Siberia, Kazakhstan, Baikal, Far East) and Europe.

Host plants. Japan: *Astilbe microphylla* Knoll, *A. pedunculata* (H. Boiss.) Nakai (Saxifragaceae); *Deutzia crenata* Sieb. et Zucc. (Saxifragaceae); *Filipendula multijuga* Maxim. (Rosaceae) (Kawabe, 1982). *Spiraea chamaedryfolia* Linn. var. *pilosa* (Nakai) Hara (Rosaceae); *Trifolium lupinaster* Linn. (Leguminosae).

This species is similar to *Olethreutes plumbosana* Kawabe, but distinguished by the quite distinct male genitalia having a broad, clavate cucullus with strong basal spine-like setae.

The *bipunctana*-group

This group comprises five species in Korea and Japan: *opacalis* sp. nov., *ineptana* (Kennel), *bipunctana* (Fabricius), *morivora* (Matsumura) and *mori* (Matsumura).

Key to the species of the *bipunctana*-group

1. Forewing ground color grayish ocher, with olive brown markings ..... *ineptana* (Kennel)
- Forewing without such markings 2
2. Forewing ground color creamy white, having a distinct narrow band at basal 1/3 ..... *bipunctana yama* (Kawabe)
- Forewing ground color pale ochreous or silvery white mixed with gray, having an indistinct narrow band at basal 1/3 3
3. Forewing expanse 17–22.5 mm ..... *mori* (Matsumura)
- Forewing expanse 11–16.5 mm 4
4. Thorax dark gray; forewing with dark gray markings ..... *morivora* (Matsumura)
- Thorax dark grayish brown; forewing with dark grayish brown mixed with ochreous markings ..... *opacalis* sp. nov.

***Phiaris opacalis* sp. nov.** (Figs 6, 14, 20)

Wing-expanse. ♂ 11 mm (Fig. 6). Head ochreous, suffused with gray. Antenna dark gray; ventral surface scattered with creamy white. Labial palpus pale ochreous; median segment slightly expanded apically, its outside mixed with gray; terminal segment shortly exposed and descending, sometimes irrorated with pale gray. Thorax blackish brown, mixed with ochreous on dorsal side, brilliant pale whitish gray on ventral side. Fore- and midlegs pale ochreous, partly suffused with gray; midtibia with two distinct grayish spots at base and subapex. Hindleg pale ochreous, outside of tibia tinged with dull gray. All tarsi with four or five rather shorter dark brownish rings. Abdomen dorsally dark gray, ventrally white ochreous or pale grayish white; anal tufts ochreous, slightly tinged with gray.

Forewing narrow, elongate; costa slightly curved outwards; apex truncate; termen curved at tornal third, oblique. Ground color pale ochreous, irregularly overlaid and striated with

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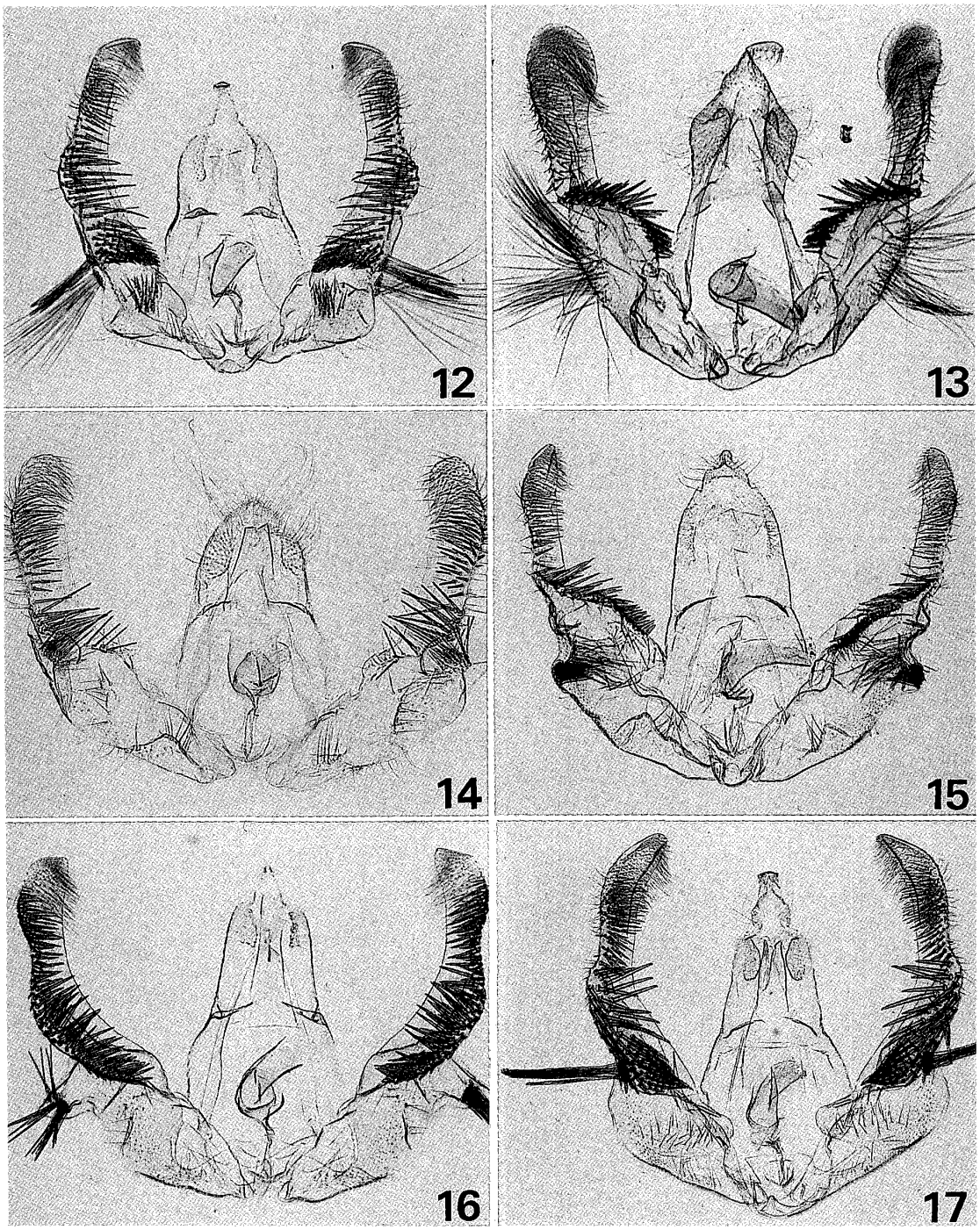

Figs 12–17. Male genitalia of *Phiaris* spp. 12. *P. pryerana* (Walsingham). 13. *P. siderana* (Treitschke). 14. *P. opacalis* sp. nov., paratype. 15. *P. ineptana* (Kennel). 16. *P. morivora* (Matsumura). 17. *P. mori* (Matsumura).

lustrous blue gray. Costal strigulae distinct, consisting of four pairs of geminate yellowish white striae on apical half of costal margin. Markings dark grayish brown, mixed and overlaid with ochreous; basal patch defined or ill-defined, outer edge convexly sinuate; central fascia diffuse, the inner edge more or less dentate, the outer edge diffuse with a strong projection at middle and emarginated above; pretornal patch rather defined, subtriangular; terminal patch elongate-ovate, the top narrowly extending to costa; apical spot large, well-

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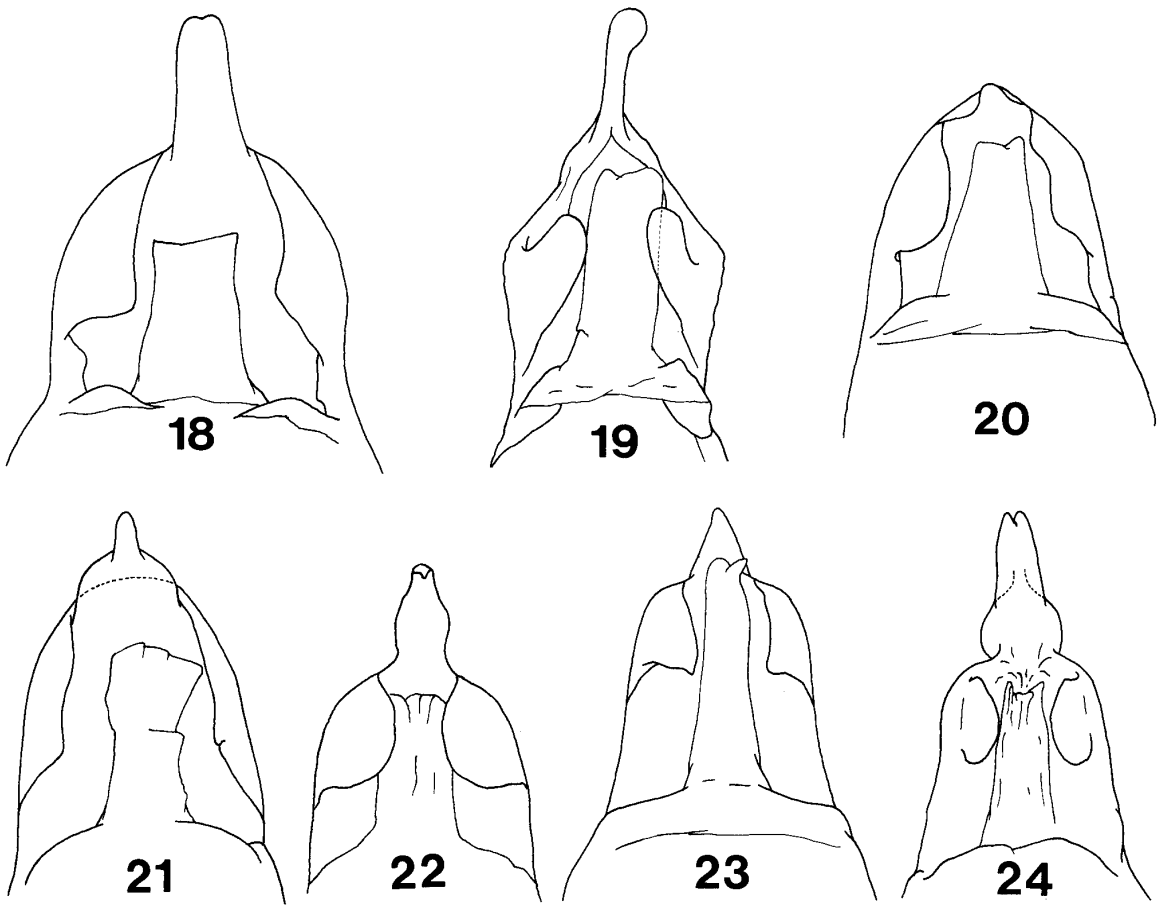

Figs 18–24. Male uncus and socius of *Phiaris* spp., ventral view. 18. *P. pryerana* (Walsingham). 19. *P. siderana* (Treitschke). 20. *P. opacalis* sp. nov., paratype. 21. *P. ineptana* (Kennel). 22. *P. bipunctana yama* (Kawabe). 23. *P. morivora* (Matsumura). 24. *P. mori* (Matsumura).

defined. Cilia pale ochreous, suffused with dark gray, with a dark grayish subbasal line. Hindwing elongate-ovate, dark grayish brown; apex rather rounded. Cilia pale gray, with a dark grayish subbasal line.

Male secondary sexual characters: Hair pencil of hindleg ochreous, 0.3 times as long as tibia. Dorsum of hindwing with a slender marginal roll, extending beyond tornus from base.

Male genitalia (Figs 14, 20). Tegumen without shoulder; uncus very short, with two narrow lobes laterally; socius large, broad; gnathos laterally sclerotized. Valva moderate in size, broader before middle, with a simple lobe behind ventro-caudal margin; cucullus equally broad, rounded at apex, sparsely with strong setae on basal 2/3; sacculus broad, with tuft consisting of about 30–40 weak spine-like setae at apical part, and with a row of 8-10 weak setae on inner surface. Aedeagus short and broad, without cornutus.

Female unknown.

Material examined. Holotype, ♂, Bibai, Koshunai, Hokkaido, Japan, 20–21. VII. 1990, Gen. sl. no. Bae 91-809, UOP.

Distribution. Japan (Hokkaido).

This new species is very similar to *exilis* (Falkovitsh), but can be distinguished by the terminal

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patch of the forewing with the top narrowly extending to costa and the shorter hair pencil of the male hindtibia (which is 0.3 times as long as tibia). Based on the male genitalia, *opacalis* sp. nov. is most closely related to *ineptana* (Kennel). The diagnostic characters are noted in the remarks on *ineptana* (Kennel).

Phiaris ineptana (Kennel) (Figs 7, 15, 21, 28)

Penthina ineptana Kennel, 1901: 255. Type locality: Russia (Amur).
Olethreutes ineptana: Razowski, 1971: 533, fig. 168; Oku, 1972: 3; Kuznetsov, 1973: 125; Kawabe, 1982: **1**: 109, **2**: 170, pl. 24, fig. 34.
Argyroploce ineptana: Liu & Bai, 1977: 80, pl. 5, fig. 21, pl. 17, fig. 139, pl. 24, fig. 139.
Phiaris ineptana: Razowski, 1995: 317; Razowski, 1999: 106.

Wing-expanse. ♂ 20 mm, ♀ 22–23 mm. Wing markings as in Fig. 7. Male secondary sexual characters: Hair pencil of hindleg dark gray, 0.7 times as long as hindtibia. Dorsum of hind wing with a marginal roll, reaching tornus from base.

Male genitalia (Figs 15, 21). Tegumen without shoulder; uncus broadly funnel-shaped, hooked, with hairs; socius narrow, not drooping; gnathos laterally sclerotized. Valva broad at basal half (twice as wide as apical half), folded at middle; cucullus rather narrow, with a row of strong spine-like setae from basal lower margin to costal margin; sacculus with two prominences at middle and apical lower margin, the apical prominence small, with two stout setae, the middle prominence large, densely covered with about 15–18 stout setae, the upper inner surface sparsely covered with light acicular setae. Aedeagus long, as long as caulis, broad, curved, with truncate apex; vesica with two small, stout spine-like cornuti.

Female genitalia (Fig. 28). Seventh sternite largely concave along posterior edge. Sterigma large, crumpled hat-like, with large, slightly sclerotized posterior plate. Ostium bursae with two small aciculate posterior lobes; colliculum long, sclerotized, expanded below ostium. Ductus bursae rather long, about 2.5 times as long as corpus bursae; corpus bursae without signum.

Material examined. JAPAN: [Hokkaido] 1 ♂, Mt Futatsuyama, Shibecha, Kushiro, 6. VII. 1978. [Iwate Pref.] 1 ♀, Matsukusa, em. 29. VI. 1973, 1 ♂, em. 26. VI. 1979 *ex Maackia amurensis*.

Distribution. Korea (North), Japan (Hokkaido, Honshu), China, Russia (Primorye).

Host plant. Japan: *Maackia amurensis* Rupr. et Maxim. (Leguminosae).

This large species is easily separated from the known species of the genus by the dark brown or olive brown markings in the forewing. The male genitalia of this species are very closely allied to the preceding species, *opacalis* sp. nov., but differ in having the much larger aedeagus, and the presence of two small, stout spine-like cornuti.

Phiaris bipunctana (Fabricius), **comb. rev.**

Pyralis bipunctana Fabricius, 1794: 250. Type locality: Europe (Italy).
Sericoris bipunctana: Herrich-Schäffer, 1849: 217.
Argyroploce bipunctana: Rebel, 1901: 108; Caradja, 1916: 57; Benander, 1950: 89, fig. 8-k, pl. 5, fig. 14, Van Deurs, 1956: 224, pl. 26, fig. 10; Hannemann, 1961: 212, pl. 17. fig. 21; Bentinck & Diakonoff, 1968: 178, pl. 26, figs 10, 11, pl. 96, figs 269a–c.
Olethreutes bipunctana: Kuznetsov, 1967: 55; Kostyuk, 1971: 46; Jaros *et al.*, 1992: 92; Byun *et al.*,

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1998: 122, fig. 208 on p. 219 (adult), fig. 208 on p. 251 (♂ genitalia), fig. 208 on p. 287 (♀ genitalia).
Phiaris bipunctana: Kuznetsov, 1973: 134; Razowski, 1983: 86, pl. 7, fig. 8; Razowski, 1996: 144.
Phiaris (*Biscopa*) *bipunctana*: Kuznetsov, 1978: 436, 444, fig. 387-2.
Olethreutes (*Biscopa*) *bipunctana*: Diakonoff, 1973: 493, figs 704–705.
Loxoterma bipunctana: Razowski, 1995: 315; Razowski, 1999: 105.

Material examined. KOREA: [Ryanggang Prov.] 2 exs, Mt Paektu, Samjiyon, Ryanggang Prov., 12. VII. 1987, 2 exs, 13. VII. 1987; 1 ex., Mupo, 14. VII. 1987. [GB] 1 ♂, Mt Saobek, 15. VII. 1987, coll. CIS.

Distribution. Korea, Russia, Europe.

Host plants. Europe: *Vaccinium* Linn., *Pyrola* Linn., *Rhododendron* Linn. (Ericaceae) (Hannemann, 1961). Russia: *Vaccinium* Linn., *Rhododendron* Linn. (Ericaceae).

Phiaris bipunctana yama (Kawabe), **comb. nov.** (Figs 8, 11, 22, 29)

Olethreutes bipunctana yama Kawabe, 1974: 102, figs 4, 26; Kawabe, 1982: **1**: 110, **2**: 170, pl. 24, fig. 36.
Type locality: Japan.
Loxoterma bipunctana yama: Razowski, 1995: 315.
Celypha expeditana: Issiki, 1957: 72, fig. 353 (*nec* Snellen, 1893).

Wing-expanse. ♂ 13–17 mm, ♀ 13–17.5 mm. Wing markings as in Fig. 8. Male secondary sexual characters: Hair pencil of hindleg ochreous, 0.6 times as long as tibia. Dorsum of hindwing with a slender marginal roll, extending beyond tornus from base.

Male genitalia (Fig. 22). Uncus narrow, twice as long as wide; socius drooping, moderate in size; gnathos membranous, laterally sclerotized. Valva folded at middle, with a small, sclerotized prominence near margin of basal cavity; cucullus broad, rounded apex, with strong spines on basal half of lower margin; sacculus broadly extended distally, with a group of strong, dense spine-like setae on its apex, consisting of 10–13 long setae, and with 10–14 long spine-like setae on inner side of prominence. Aedeagus moderate in size, tapering distally, with two or three spine-like cornuti.

Female genitalia (Fig. 29). Seventh sternite slightly concave at middle of posterior edge. Sterigma moderate in size, heart-shaped, not aciculate. Ostium bursae long tubular, well-sclerotized, sparsely aciculate; colliculum long tubular, well-sclerotized laterally. Ductus bursae about 1.7 times as long as corpus bursae; corpus bursae moderate in size; signum a small, concave plate, consisting of numerous dents.

Material examined. JAPAN: [Hokkaido] 1 ♀, Kawayu, Kushiro, 21. VI. 1958; 3 ♂, Mt Daisetsuzan, 22. VII. 1952; 1 ♂ 1 ♀, Shirogane Spa, Kamikawa, 6. VII. 1981; 2 ♀, Mt Muineyama, 29. VII. 1972; 6 ♂ 4 ♀, Niseko, Shiribeshi, 27. VII. 1982. [Aichi Pref.] 1 ♂, Uradanikougen, *ca* 900 m, Kitashidara, 5. V. 1977.

Distribution. Japan (Hokkaido, Honshu).

Host plant. Unknown.

This subspecies differs from European *bipunctana bipunctana* (Fabricius) in the male and female genitalia in the following points: the uncus and projection of the valva are longer and narrower, the cucullus narrower, and the sterigma (around ostium bursae) is longer.

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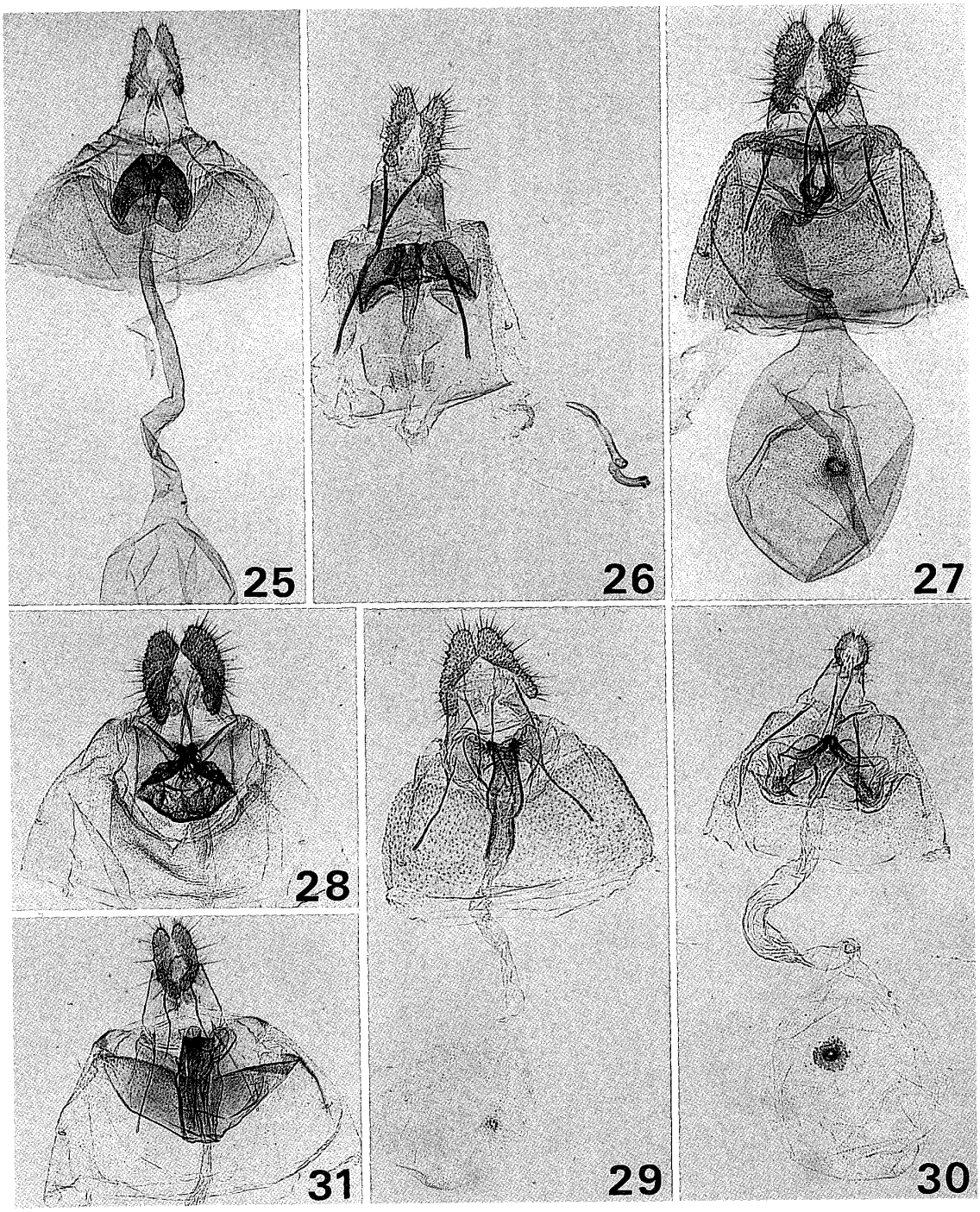

Figs 25–31. Female genitalia of *Phiaris* spp. 25. *P. pryerana* (Walsingham). 26. *P. acro-pryerana* sp. nov., holotype. 27. *P. siderana* (Treitschke). 28. *P. ineptana* (Kennel). 29. *P. bipunctana yama* (Kawabe). 30. *P. morivora* (Matsumura). 31. *P. mori* (Matsumura).

Phiaris morivora (Matsumura), **comb. nov.** (Figs 9, 16, 23, 30)

Sericoris morivora Matsumura, 1900: 196; Matsumura, 1917: 511, pl. 19, fig. 19; Matsumura, 1920: 458, fig. 162. Type locality: Japan.
Cymolomia (*Exartema*) *morivora*: Matsumura, 1931: 1068.
Exartema morivora: Inoue, 1954: 108.

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Exartema morivorum: Issiki, 1957: 71, fig. 346; Oku, 1967: 54 (miss spell.).
Olethreutes morivora: Kawabe, 1982: **1**: 109, **2**: 170, pl. 24, fig. 31, pl. 285, fig. 7, pl. 292, fig. 7; Park, 1983: 716, 981, fig. 381, pl. 46, fig. 813; Razowski, 1995: 311; Byun *et al.*, 1998: 127, fig. 219 on p. 219 (adult) fig. 219 on p. 253 (♂ genitalia), fig. 219 on p. 287 (♀ genitalia); Razowski, 1999: 104.

Wing-expanse. ♂ 12–16 mm, ♀ 14.5–16.5 mm. Wing markings as in Fig. 9. Male secondary sexual characters: Hair pencil of hindleg blackish gray, 0.7 times as long as tibia. Dorsum of hind wing with a marginal roll, reaching tornus from base.

Male genitalia (Figs 16, 23). Uncus moderate in size, cone-shaped, hooked, sparsely haired, with emarginate apex; socius moderate in size, drooping; gnathos laterally sclerotized, connected with long and narrow tuba analis. Valva moderately broad, folded at middle; cucullus rather narrowed below middle, with strong spine-like setae along lower margin, but not reaching its apex; sacculus rather broad, with a large prominence at apical lower margin, which has a dense cluster of spine-like setae, consisting of about 20 strong moderate-sized setae. Aedeagus as long as caulis, broad, truncate at apex, with a minute dent on apical lower wall; cornutus absent.

Female genitalia (Fig. 30). Papillae anales and eighth segment moderately small. Seventh sternite concave at caudal part, forming a membranous inner pocket. Sterigma large, partly aciculate, producing posterior edge of ostium, with two lobes at posterior margin, and with two sclerotized prominences at lateral sides of anterior margin. Ostium bursae small, opening at middle of sterigma; colliculum moderate in size, tubular, sclerotized. Ductus bursae as long as corpus bursae; corpus bursae large, weak membranous; signum rather large, nipple-like.

Material examined. KOREA: [GG] 3 ♀, Mt Gwangdeok, 20. VII. 1996; 1 ♂, Mt Soyo. 7. VII. 1996. [GW] 1 ♂ 1 ♀, Jinburyeng, Inje, 7. VII. 1998; 1 ♂, Mt Balgyo, Hoengseong, 7. VII. 1998; 1 ♂, Mt Chiak, 16. VII. 1978. [GB] 2 ♂, Mt Eorae, Yeongju, 30. VI. 1998, coll. UIB. 1 ♂, Mt Chiak, 23. VI. 1977; 1 ♀, Deokduweon, Chuncheon, 5. VII. 1993; 1 ♀, Mt Palbong, 5. VII. 1990, coll. CIS. JAPAN: [Hokkaido] 1 ♀, Nukabira, Higashidaisetsu, 23–25. VII. 1990; 5 ♂ 3 ♀, Bibai, Koshunai, 20–21. VII. 1990; 1 ♀, Sapporo, 29. VII. 1967; 1 ♀, Nopporo, Eebetsu, 27. VII. 1965, 1 ♂ 1 ♀, 17. VII. 1990; 1 ♀, Hokkaido U. Exp., Tomakomai, 18-20. VII. 1990. [Iwate Pref.] 1 ♀, Tsunagi, 25. VI. 1975; 1 ♀, Morioka, 15. VII. 1966. [Niigata Pref.] 1 ♀, Mt Kakudayama, 1. VII. 1973. [NARA Pref.] 2 ♂, Kawakami, 18–19. VI. 1991. [Tokushima Pref.] 4 ♂ 1 ♀, Misato-son, 15. VI. 1991.

Distribution. Korea, Japan (Hokkaido, Honshu, Shikoku, Kyushu).

Host plants. Korea: *Morus alba* Linn., *M.* sp. (Park, 1983). Japan: *Morus alba* Linn. (Moraceae) (Matsumura, 1900).

This species is rather similar to *Rudisociaria orthocosma* (Meyrick) in superficial appearance, but the markings of the forewing are much darker than those of *orthocosma* (Meyrick). In the male genitalia, *morivora* (Matsumura) is closest to *mori* (Matsumura), but it differs in having the much smaller uncus and the presence of a large prominence at the apical lower margin of the sacculus.

Phiaris mori (Matsumura), **comb. nov.** (Figs 10, 17, 24, 31)

Exartema mori Matsumura, 1900: 196; Matsumura, 1907: 211; Matsumura, 1917: 511, pl. 19, fig. 20; Matsumura, 1920: 459, fig. 163; Inoue, 1954: 108; Issiki, 1957: 70, fig. 343: Okano, 1959: 262, pl. 175, fig. 25; Oku, 1967: 54. Type locality: Japan.

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Cymolomia (*Exartema*) *mori*: Matsumura, 1931: 1068.
Olethreutes (*Olethreutes*) *mori*: Diakonoff, 1973: 484.
Olethreutes mori: Kuznetsov, 1973: 124; Kawabe, 1982: **1**: 109, **2**: 170, pl. 24, fig. 33; Park, 1983: 717, 982, fig. 382, pl. 46, fig. 814; Park & Park, 1988: 74, fig. 12; Razowski, 1995: 311; Byun *et al*., 1998: 122, fig. 208 on p. 219 (adult), fig. 208 on p. 251 (♂ genitalia), fig. 208 on p. 287 (♀ genitalia); Razowski, 1999: 103.
Exartema japonicum Walsingham, 1900: 126; Inoue, 1954: 108. Synonymized by Issiki, 1957: 70. Type locality: Japan (Honshu: Tsuruga).

Wing-expanse. ♂ 17–21 mm, ♀ 19–22.5 mm. Wing markings as in Fig. 10. Male secondary sexual characters: Hair pencil of hindleg blackish gray, 0.8 times as long as tibia. Dorsum of hindwing with a cylindrical roll, reaching tornus from base.

Male genitalia (Figs 17, 24). Uncus arrowhead-shaped, apically with long and narrow projection, the top emarginate; socius drooping; gnathos laterally sclerotized, connected with long and narrow tuba analis. Valva broadly folded at middle; cucullus rather narrowed at about middle part, with strong spine-like setae on basal half; sacculus rather broad, expanding at ventro-caudal margin, with a prominence at upper margin of basal cavity, with tuft consisting of about 15 long (twice as long as that of *morivora*) and spine-like setae at apical inner surface. Aedeagus as long as caulis, broad, truncate at apex, with two or three minute dents on apical lower wall; cornutus absent.

Female genitalia (Fig. 31). Seventh sternite strongly concave at caudal part, forming a membranous inner pocket. Sterigma long, tubular, aciculate at dorsal side. Ostium bursae with two small transparent lateral lobes; colliculum long, tubular, indistinct. Ductus bursae long, about 2.5 times as long as corpus bursae; corpus bursae with an indistinctly aciculate signum.

Material examined. KOREA: [GG] 1 ♀, Mt Gwangdeok, 20. VII. 1996. [GW] 1 ♀, Mt Gyebang, 7. VIII. 1997; 1 ♂ 1 ♀, Mt Deokga, Weonju, 24. VII. 1997. [GB] 1 ♀, Mt Sobaek, Youngju, 17. VII. 1998, coll. UIB. [GG] 1 ♂, Suweon, VI. 1976; 1 ♂, Gwagleung, 27. VI. 1986. [GW] 2 ♂, Seomyeon, Yangyang, 25. VII. 1987; 1 ♀, Chuncheon, 30. VII. 1987, 1 ♀, 5. VII. 1989; 1 ♀, Soyang Dam, 3. VII. 1990; 2 ♀, Sogeumgang, 8. V. 1988; 1 ♀, Mt Odae, 6. VIII. 1989; 1 ♀, Mt Seolak, 10. VIII. 1989; 1 ♀, Mt Jeombong, 10. VIII. 1992; 1 ♀, Hongcheon, 18. VIII. 1988. [JJ] 1 ♀, Seongpanak, 24. VI. 1994, coll. CIS. JAPAN: [Hokkaido] 1 ♀, Koganeyu Spa, Zyozankei, 2. VII. 1984; 1 ♂ 1 ♀, Bibai, Koshunai, 20–21. VII. 1990; 2 ♂ 3 ♀, Nopporo, Ebetsu, em. 18–22. VII. 1990, *ex Morus alba* L.; 1 ♂, Hokkaido U. Exp., Tomakomai, 18–20. VII. 1990. [Aomori Pref.] 1 ♂, Sukayu, 31. VII. 1970. [Iwate Pref.] 3 ♂ 4 ♀, Rikuzentakata, em. 23. VI. 1955, *ex Morus bombycis* Koidz.; 3 ♂ 2 ♀, Morioka, em. 8–14. VI. 1967, 2 ♀, em. 2–3. VII. 1967; 1 ♂ 3 ♀, Yagita, Morioka, 29. VII. 1990. [Niigata Pref.] 1 ♀, Sado I., 23. VII. 1969; 1 ♀, Kakuda, em. 18. VI. 1969. [Nagano Pref.] 3 ♂, Karuizawa, 10. VII. 1980; 1 ♀, Tobira Spa, 24–25. VIII. 1971; 1 ♀, Kisokomakogen, em. 31. VI. 1972; 3 ♂ 2 ♀, Kisojihara, Nagawa, em. 4–9. VII. 1990, *ex Morus alba* L. [Nara Pref.] 1 ♂ 1 ♀, Kawakami, 18–19. VI. 1991. [Hyogo Pref.] 1 ♀, Onsencho, Mikata, 14–16. VII. 1970.

Distribution. Korea, Japan (Hokkaido, Honshu), northeastern China, Russia (Primorye).

Host plants. Korea: *Morus alba* Linn. (Park, 1983). Japan: *Morus alba* Linn. (Matsumura, 1900), *Morus bombycis* Koidz. (Moraceae).

This species is easily distinguished from other congeners by the large wing size. In the male genitalia, *mori* (Matsumura) is similar to the preceding species, *morivora* (Matsumura), but

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differs in the discriminating characters noted in the remarks on *morivora* (Matsumura).

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摘　　要

韓国と日本産 *Phiaris* 属 (鱗翅目，ハマキガ科) の分類学的研究 (I) (裵良燮)

Phiaris Hübner はハマキガ科ヒメハマキガ亜科に属し，外見が非常に類似した種からなる属で，全北区から 50 種以上が記載され，旧北区からは 29 種が記録されている．本属は今まで韓国と日本では主に *Olethreutes* 属として扱われていたグループで，韓国と日本の材料を中心に再検討した結果，5 新種を含む 28 種が確認され，それらは 7 つの種群に分けることができた．その結果は 3 つの論文に分けて順次報告する予定であるが，第 1 報となる本文では，属の再記載，種群の検索表の提出，2 つの種群 (*pryerana*-group と *bipunctana*-group) に含まれる 8 種についての記載または再記載を行った．それらのうち 2 種は新種，*P. acropryerana* Bae と *P. opacalis* Bae で，*P. mori* (Matsumura), *P. morivora* (Matsumura) および *P. bipunctana yama* (Kawabe) の 3 種はこれまで *Olethreutes* 属に置かれていたものを今回本属に移したものである．その他，従来韓国と日本から知られていた 3 種，*P. pryerana* (Walshingham), *P. siderana* (Treitschke) および *P. ineptana* (Kennel), を扱った．

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